

25245

S/122/60/000/003/012/015
A161/A130

Calculating the cutting force ...

$$\bar{\tau} = 0.19 \cdot 270 \approx 51 \text{ kg/mm}^2.$$

As it is known, the chip shrinkage and hence the plastic deformation of removed metal layer changes with raising cutting speed on a curve with a minimum and a maximum that shift toward lower cutting speeds if feed raises. But the chip shrinkage variation amplitude will remain approximately the same. This fact made possible the use of the second calculation method - by the mean value of the chip deformation in cutting with a certain tool. The dependence of the mean cutting force P_z and the mean chip shrinkage from feed at different cutting conditions on "45" steel determined on a ДМН-500 (DIP-500) and a lathe of Kolomenskiy zavod (Kolorna Plant) is shown. In cutting "45" steel with a cutter with rack angle $\gamma = +3^\circ$, feed range per revolution from 1 to 2.4 mm causes a chip shrinkage reduction from 2.5 to 2.0. The cutting depth has nearly no effect on the mean chip shrinkage. A few tests with different cutting speeds are sufficient to find the mean chip shrinkage. The mean tangential stresses in the shear plane (for all cutting conditions) are found with a formula of N.N. Zarev (Ref. 1):

$$\tau_{\text{mean}} = k \bar{\sigma}_s \quad (3)$$

where $\bar{\sigma}_s$ is the ultimate strength, in kg/mm²; k - a factor being 1 for annealed carbon steel and austenite steel, or 0.9 for normalized, improved and alloy steel.

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A161/2130

Calculating the cutting force ...

Then, knowing the wanted cutting depth and the feed, the cutting force can be found by the mean plastic deformation of the removed metal layer and the mean value of tangential stress using Formula (1). For brittle metal the cutting force is found by the formula (Ref. 5: Yu.A. Rosenberg, L.M. Sedikov, "Vestnik mashinostroyeniya", no. 12, 1957):

$$F_1 = 0.18 HS \cdot k_1 \cdot st \quad (4)$$

According to experimental data the k_1 factor value for the optimum durability depends on the tool rake angle only:

γ , °	-10	0	+10
k_1	5.1	4.2	3.7

The cited formulas do not take into account the forces on the rear face of the cutter, for they are negligible in removal of large chip with a sharp cutter. The specific cutting power, i.e., power related to the volume unit of removed metal, is numerically equal to the specific force [Ref. 6: S.S. Mozhayev, T.G. Sarmotina, Skopostnoye i silovoye tocheniye staley povyshennoy prochnosti (High-speed and power turning of high-strength steel), Oborongiz, 1957]:

$$A_N = \frac{P \cdot v}{st \cdot v} = \frac{F}{st}$$

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Calculating the cutting force ...

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S/122/EC/000/003/012/015
A151/A130

The cutting power (in kw) can be found by the formula

$$N_{cut} = A_N s v,$$

or

$$N_{cut} = T (\epsilon + 1) s v \cdot 0.163 \cdot 10^{-3} v \quad (5)$$

where v is the cutting speed, in m/min. The machine tool efficiency at given cutting conditions can be found knowing the power ($N_{f.mot}$) consumed by the electric motor at given cutting conditions:

$$\eta_{machine} = \frac{N_{cut}}{N_{f.mot} \eta_{mot}} \quad (6)$$

where η_{mot} is the efficiency of motor. The power utilization factor of the machine tool is determined by the installed capacity of the main drive (N_n);

$$K_N = \frac{N_{f.mot} \eta_{mot}}{N_n} = \frac{N_{cut}}{N_n \eta_{mach}} \quad (7)$$

$$K_N = \frac{0.163 \cdot 10^{-3} T (\epsilon + 1) s v}{N_n \eta_{mach}} \quad (8)$$

There are 2 figures and 6 Soviet-bloc references.

Card 5/5

S/028/61/000/001/003/005
B021/B054

AUTHOR: Sedokov, L. M.

TITLE: Static tests of brittle materials

PERIODICAL: Standartizatsiya, no. 1, 1961, 28-29

TEXT: Experience has shown that the results of tests for compressive strength of brittle materials (such as gray cast iron) depend largely on test conditions, and vary widely for the same material. This is due to a change in friction between the front sides of specimens and the supporting plates. According to publications, the compressive strength of specimens of different dimensions made of the same gray iron varies between 80 and 135 kg/mm². Fig. 1 shows that friction is the greater, the smaller the ratio h/d between height and diameter of the specimen. OCT 2055-43 (GOST 2055-43) specifies $h/d = 1$. This, however, does not yet eliminate the effect of friction. At a ratio $h/d = 2$, the effect of friction on the front sides is small, and test results are stable and dependable. Therefore, it is suggested to modify the standard. The direct determination of the

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S/028/61/000/001/003/005
B021/B054 ✓

Static tests of brittle materials

tensile strength of cast iron, plastics, rocks, concrete, and bricks gives no stable and dependable results for many reasons (no precise central clamping on the tensile-testing machine, material defects of specimens). The determination of the tensile strength by indirect methods (calculation on the basis of compressive and bending strength) is theoretically poorly founded, and also influenced by test conditions. The determination of the tensile strength of cast iron by means of the wedge pressure was not adopted since test results depend greatly on the dimensions of specimens and the state of the cutting surface of wedges. For concrete, the determination of tensile strength was developed on the basis of radial compression of cylindrical specimens. The Department of Strength of Materials of the Tomskiy politekhnicheskii institut (Tomsk Polytechnic Institute) made experiments with this method on specimens of cast iron and plastics, and obtained positive results. The destruction processes of cast iron specimens in axial (Fig. 2) and radial (Fig. 3) compression were recorded on an oscilloscope with the aid of a dynamometer with wire strain gauges. Calculations on the basis of test results of cylindrical gray iron specimens for static radial compression agreed with test results for tensile strength. It is suggested to work out a State standard for determining

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Static tests of brittle materials

S/028/61/000/001/003/005
B021/B054

the tensile strength of brittle materials. There are 3 figures.

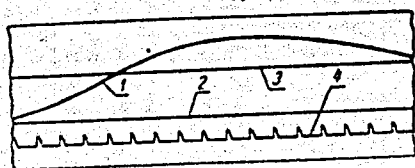


Fig. 2

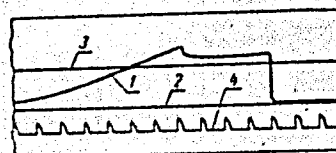


Fig. 3

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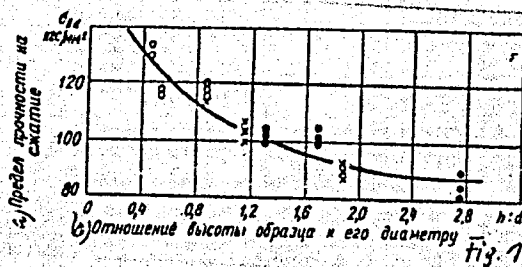
Static tests of brittle materials

S/028/61/000/001/003/005
B021/B054

Legend to Fig. 1: Static compressive strength of gray iron as a function of the ratio between height and diameter of the specimen.
a) limit compressive strength; b) h/d

Legend to Fig. 2: Oscillogram of the destruction process of cylindrical gray iron specimens in static axial compression.

Legend to Fig. 3: Oscillogram of the destruction process of cylindrical gray iron specimens in static radial compression.



Card 4/4

SEDOKOV, L.M., kand. tekhn. nauk, dotsent

Calculating tangential stresses caused by metal cutting.
Izv. vys. ucheb. zav.; mashinostr. no.10:216-223 '63.
(MIRA 17:3)

1. Tomskiy politekhnicheskii institut.

SEDOKOV, L.M.

Friction coefficient and plastic deformation. Izv. vys. ucheb.
zav.; fiz. no. 4:124-127 '64. (MIRA 17:8)

1. Tomskiy politekhnicheskii institut imeni Kirova.

SEDOVKOV, L.M.

Dimensionless parameters of the resistance of metals to plastic
deformation. Zav. lab. 30 no.10:1254-1260 '64. (MIRA 18:4)

I. Pomskiy politekhnicheskii institut.

NEMIROVSKIY, I.A.; NEYSHTADT, D.M.; SEDOKOV, L.M., kand. tekhn. nauk; IL'IN, Yu.M.; ZHDANOVICH, V.F., inzh., retsenzent; KUZNETSOV, Yu.I., inzh., retsenzent; KOSILOVA, A.G., kand. tekhn. nauk, red.

[Increasing the productivity of heavy-duty machine tools]
Povyshenie proizvoditel'nosti krupnykh metallovezhushchikh stankov. [By] I.A.Nemirovskii i dr. Moskva, Mashinostroenie, 1965. 201 p. (MIRA 18:5)

SEDOKOV, L.M.

Deformation resistance during the upsetting of rectangular prisms
between parallel plates. Izv.vys.ucheb.zav.; chern.met. 8 no.6:82-
88 '65. (MIRA 18:8)

1. Tomskiy politekhnicheskii institut.

L 00816-67 EWT(d)/EWT(m)/EWP(w)/EWP(t)/ETI/EWP(k) IJP(c) JD/HW/EM
ACC NR: AR6004030 SOURCE CODE: UR/0277/65/000/009/0003/0003

AUTHORS: Sedokov, L. M.; Del', G. D.

TITLE: Stressed-deformed state during shear 26

SOURCE: Ref. zh. Mashinostroitel'nyye materialy, konstruktii i raschet detaley mashin. Gidropriwod, Abs. 9.48.17

REF SOURCE: Iv. Tomskogo politekhn. in-ta, v. 133, 1965, 37-40

TOPIC TAGS: metal test, stress analysis, shear stress, material deformation, plastic deformation

ABSTRACT: Results from an investigation of the stressed-deformed state accompanying double shear are presented. These results were obtained in the stage of well developed plastic deformation preceding a failure. The investigation was carried out by the methods of measuring hardness and by using dividing grids with a base of 0.208 mm. Studies conducted on various metals have shown that the deformed state during shear is practically independent of the material's properties. From a shear diagram of a material it is possible to construct a corresponding graph of the tangent stresses and, by integrating, to obtain the magnitude of the deforming force. [Translation of abstract]

SUB CODE: 11, 13

Card 1/1 Fv

UDC: 539.4

S/191/62/000/011/013/019
B101/B166

AUTHORS: Sedokov, L. S., Bogomolov, Yu. S.

TITLE: Determination of the tensile strength of brittle plastics
by compression of cylindrical specimens along the radius

PERIODICAL: Plasticheskiye massy; no. 11, 1962, 57-59

TEXT: In view of the difficulties attending direct determination of the tensile strength for brittle material, it is suggested that the method developed for cast iron by A. V. Verkhovskiy, V. V. Romanovskaya (Zav. lab., no. 11 (1951)) and L. M. Sedokov (Standartizatsiya, no. 1 (1961)) should be also for testing brittle plastics. The cylindrical specimen is crushed along its radius between the plates of a press. $\sigma = AP/dl$, where P is the maximum force measured by strain gages, kg; d is the specimen diameter, cm; l is the specimen length, cm; the coefficient A was 0.7 for the plastics investigated, i.e. near the value of the cosine of the angle of the natural wedges formed in crushing the specimen. The K-21-22 (K-21-22), K-17-2 (K-17-2), K-18-2 (K-18-2), K-20-2 (K-20-2), and K-18-56 (K-18-56) plastics were tested by this method. For K-21-22,

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S/191/62/000/011/013/019
B101/B186

Determination of the tensile ...

K-17-2, and K-20-2, good agreement was found with the data obtained by the direct method. For the two other plastics, the values determined by compression were too low, which calls for further investigation. The root-mean-square deviation by the new method was smaller than in the direct determination of the tensile strength. Therefore the new method is recommended for use in works tests. There are 2 figures and 1 table.

Card 2/2

CHUMER, E. A.

"Investigation of the Passage of Gashes in Compressible Rocks by Explosive Methods."
Civil Tech Inst, Dnepropetrovsk Mining Inst, Dnepropetrovsk, 1953. Dissertation
(Referativnyi Zhurnal--Mekhanika Gornow, Feb 54).

Doc. 801.206, 17 Apr 1954

SEDOKUR, Konstantin Afanas'yevich [deceased]; D'YACHENKO, I.M., red.;
MATUSEVICH, S.M., tekhn. red.

[Boring and blasting operations] Burovzryvnye raboty. Kiev, Gos.
izd-vo tekhn.lit-ry USSR, 1961. 231 p. (MIRA 14:12)
(Boring) (Blasting)

SEIDOL, Yu.Ya.; SHNEPS, M.A.

Some qualitative studies of limitedly available systems. Probl. pered.
inform. 1 no.2:87-94 '65. (MIRA 18:7)

SEDOL, Ya.Ya.

Free product of associative calculi with a unified subalphabet, and
certain contiguous problems. Dokl. AN SSSR 158 no.5:1034-1037 0 '64.
(MIRA 17:10)

1. Matematicheskii institut im. V.A.Steklova AN SSSR. Predstavleno
akademikom P.S.Novikovym.

SEDOR, A.M.

Selecting the number of pump blades. Stan.i instr. 33 no.9:8-10
s '62. (MIRA 15:9)

(Blades) (Pumping machinery)

ACC NR: AT7002857 (N) SOURCE CODE: UR/3239/66/000/003/0092/0095

AUTHOR: Sedor, A.M.

ORG: none

TITLE: Power-output reserve in hydrofoil main engines

SOURCE: Nikolayev. Korablestroitel'nyy institut. Sudostroyeniye i morskoye sooruzheniya, no. 3, 1966. Sudovyye energeticheskiye ustanovki (Ship power equipment), 92-95

TOPIC TAGS: hydrofoil, marine engine, diesel engine, marine engineering, *ship propeller*

ABSTRACT:

A method of determining the power-output reserve of a hydrofoils' main engines and estimating the maximum power loading during its acceleration, while overcoming the resistance peak, is described. Considering that the water's resistance to the propeller's rotation and the shafting's friction must be overcome by the engine's shaft horsepower, and that the resistance peak in the hydrofoil's resistance curve $R = f(v)$ (v - hydrofoil's speed relative to the water) must be overcome by the propeller thrust, expressions are derived for the angular velocity which the engine must develop to overcome

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UDC: none

ACC NR: AT7002857

the resistance peak, the angular velocity which it is capable of developing, and the relative power outputs. The difference in the relative power outputs is expressed by an equation which characterizes the relative power-output reserve W . A diagram shows the relationship between W and the relative speed v_0/v_e (v_0 = steady speed at the end of the acceleration period and v_e = economical foilborne speed) at various hydrofoil resistance and angular velocities of the engine's driveshaft. The coefficients in the expression for W were taken from hydrofoil-propeller model tests. The curves show that at certain relative Froude numbers $W \leq 0$ for certain resistances and angular shaft velocities; this indicates that the hydrofoil does not lift. It is also shown that under certain conditions the hydrofoil's relative power-output reserve is low. This results in an increased acceleration period for the hydrofoil. Electronic-simulation data on the acceleration of hydrofoil hydromechanical complexes proved the analytical relationship $W = f(v_0/v_e)$, on which the described method is based. [GE]

SUB CODE: 3/13/ SUBM DATE: none/ ORIG REF: 003/ ATD PRESS: 5114

Cord 2/2

SEDOR, A.M., assistant

Determining the optimum number of blades on a blade (slide-valve) pump.
Sud. sil. ust. no.2:34-38 '63. (MIRA 17:1)

1. Odesskoye vyssheye inzhenernoye morskoye uchilishche.

BROYTMAN, A.A.; DEREVICH, V.A.; SEDOR, A.M.; ANDREYEVA, L.S.,
red.; SKOBELING, L.V., red.

[Load-hoisting machines and arrangements on ships] Sudovye
gruzopod"emnye mashiny i ustroistva. Moskva, Transport.
1964. 298 p. (MIRA 17:12)

5208V, A

PHASE I BOOK EXPLOITATION

SOV/6261

Kernenergie und Flotte; Artikelsammlung (Nuclear Energy and the Navy; Collection of Articles) [Berlin] Deutscher Militärverlag [1961].
232 p. Errata slip inserted. 2000 copies printed.

Translation from the Russian of: Atomnaya energiya i flot.

Translator: Erika Steuk, Lieutenant Commander. Responsibility for
German edition: Claus Gruszka, Engineer; Ed.: Klaus Krumsieg.

PURPOSE: This collection of articles is intended for officers of the
army, coast guard, and merchant marine.

COVERAGE: The book, a translation from the Russian, contains 25 ar-
ticles dealing with the application of nuclear weapons to naval
combat operations. Chapters 19 and 25 have been supplemented with
additional data for this edition. The devastating features of nu-
clear explosions are discussed. Attention is also given to the
protection of personnel, ships, and coastal facilities against nu-
clear weapons, and to the present and future applications of nuclear

Card 1/6

Nuclear Energy and the Navy (Cont.)

SOV/6261

power plants to shipping. No personalities are mentioned. There are 16 references: 10 Russian (including 3 translations from English-language sources), 1 French, 1 German, 1 English, 1 American, and 2 either English or American.

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Nuclear Energy and the Navy (Cont.)

SOV/6261

5. I. Frolov, Engineer Commander (Navy). Primary Penetrating Radiation 58
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Nuclear Energy and the Navy (Cont.)

SOV/6261

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Technical Sciences. Depth Charges 189
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Plants in Warships 192
22. N. Solntsev, Engineer Captain (Navy), Docent, Candidate
of Technical Sciences. Utilization of Nuclear Power Plants
in Shipping 197
23. V. Zvonkov, Corresponding Member, Academy of Sciences USSR,
Honored Scientist and Technologist RSFSR. Nuclear Power
Plants in Transportation 204
24. N. Varvarov, Guards Colonel. Nuclear-Powered Flying Boat 209

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Nuclear Energy and the Navy (Cont.)

SOV/6261

25. L. Chernous'ko, Engineer, Captain (Navy). The Ice-Breaker
Lenin

216

AVAILABLE: Library of Congress

SUBJECT: Nuclear Engineering

Card 6/6

AD/jsj/svb
3-13-63

SEDOV, A.A., inzh.

Some aspects of standard planning of thermoelectric power plants.
From stroi. 37 no.5:6-11 My '59. (MIRA 12:7)
(Electric power plants) (Precast concret construction)

SEDOV, A.A., mashinist-instruktor

Advice to mechanics of electric sections. Elek. i tepl. tiaga 4
no.5:43 My '60. (MIRA 13:7)
(Electric railway motors)

SEDOV, A.A., zasluzhenny uchitel' shkoly RSFSR

Role of the productive labor of the students in the acquisition
of perceivable knowledge in physics. Fiz. v shkole 20 no.6:34-38
N-D '60. (MIRA 14:2)

1. 16-ya srednyaya shkola, Moskva.
(Physics—Study and teaching)

SEDOV, A.A., zasluzhennyi uchitel' shkoly RSFSR

Role of practical engineering work in raising the quality of students' knowledge of physics. Fiz.v shkole 20 no.1:42-46 Ja-F '60.
(MIRA 14:10)

1. 16-ya srednyaya shkola, Moskva.
(Physics--Study and teaching)

SEDOV, A.A.

Raise the technical level of the construction of thermal electric
plants. Prom.stroi. 40 no.4:2-3 '62. (MIRA 15:5)
(Electric power plants)

SEDOV, Anatoliy Ivanovich; DUGIN, Sergey Aleksandrovich; SMIRNOV,
O.S., red.; GORYACHKINA, R.A., tekhn. red.

[Motorbus passenger traffic census] Obsledovanie passazhiro-
potokov avtobusov. Moskva, Avtotransizdat, 1963. 77 p.
(MIRA 16:6)

(Motorbus lines) (Traffic surveys)

SEDOV, A. (Eng. Lt. Col.)

"Penetrating radiation", published in the N: Red Star, No 112, 1954.

SO: Summary -D-110533, 19 Oct 1954.

SEDOV, A., Engr-Lt Col, Candidate of Technical Sciences

Author of article, "The Problems of the Utilization of Atomic Energy (The Source of Nuclear Fuel)," concerning the materials used as nuclear fuel, their sources, and their locations throughout the world, The author briefly described the process of extracting uranium from ore, isolating U-235 from pure uranium, and obtaining U-238 and U-239. The author also discussed thorium, heavy hydrogen, and super heavy hydrogen. Krasnaya Zvezda, Moscow, 2 Sep 54

Author of article, "Penetrating Radiation and Radioactive Contamination of Areas by an Atomic Explosion." Doblest', (24th Air Army), 7 Aug 54; Sovetskaya Armiya, Group of Soviet Forces, Germany, 12 Aug 54

SO: SUM 291, 2 Dec 1954

SED OV, ...Ynu (Engineer-Colonel)

Author of an article on the problems of the use of atomic energy. He states that there is a relatively large amount of uranium available in the world. He discussed types of nuclear reactions.

SO: RED STAR, 2 September 1954, Unclassified

SEDOV, A., (Engr-Lt Col, Candidate of Technical Sciences)

Author of article, "The Physics of the Action of Nuclear Forces," subtitled, "Penetrating Radiation," discussing the release of neutrons and gamma rays during an atomic blast, of the penetrating ability of gamma rays, and of the effect they have on various materials. Translated in full in Joint Press Reading Service, No 140, 20 May 1954. (Krasnaya Zvezda, Moscow, 13 May 54).

SO: SUM No. 208, 9 Sep 1954

Trans. - D-141887, 17 Dec 54

SEDOV, D.

AID P - 1559

Subject : USSR/Nuclear power

Card 1/1 Pub. 135 - 12/18

Author : Sedov, A., Engineer Lt. Col., Kand. of Tech. Sci.

Title : Radioactive contamination of a locality and aircraft engineering

Periodical : Vest. vozd. flota, 2, 64-70, F 1955

Abstract : The author explains the process of contamination by atomic radiation and gives formulae and diagrams of the atomic reaction. He discusses various conditions of atomic reactions and their influence on the degree of contamination. He considers the contamination of mechanized troops and of flying crews during take-off or landing. He mentions also methods of prevention from contamination of personnel and equipment and stresses the necessity of a good organization of special decontaminating crews. Diagrams, formulae

Institution: None

Submitted : No date

Trans. - D 418425

SYRNEV, Vladilen Pavlovich; PETROV, Nikolay Panteleymonovich; ~~SRDOV~~ A.I.,
kandidat tekhnicheskikh nauk, inzhener-podpolkovnik, redaktor;
KADAR, Ya.M., redaktor; SRIENIS, N.V., tekhnicheskij redaktor.

[Radioactive emissions and their measurement] Radioaktivnye izlu-
cheniya i ikh izmereniya. Moskva, Voen. izd-vo Ministerstva obor.
SSSR, 1956. 159 p. (MIRA 9:6)

(Radioactivity--Measurement)

SEDOV, A. (Eng., Lt. Col., Cand. Tech. Sci.)

"The Problems of Safeguards Against Radiation on Atomic Aircraft,"
Sovetskaya Aviatsiya, 25 Oct 1957, p. 4.

Translation - 1156881

NEYMAN, Moisey Borisovich, prof., doktor khim. nauk; SADILENKO, Konstantin
Mikhaylovich, nauchnyy sotrudnik; ~~SKDOV, A.I.~~, inzh.-podpolkovnik,
kand. tekhn. nauk, red.; KADNER, Ya.M., red. izd-va; MEZHMERITSKAYA,
N.P., tekhn. red.

[Thermonuclear weapons] Termoladernoe oruzhie. Moskva. Voen. izd-vo
M-va obor. SSSR, 1958. 234 p. (MIRA 11:7)

1. Akademiya nauk SSSR (for Sadilenko).
(Atomic weapons)

21(2) PAGE 1 BOOK EXPLOITATION 207/2703

Atomic energy, i. flat, atomik statey (Atomic Energy and the Navy Collection of Articles) Moscow, Izvestiya, 1959. 232 p. (Series: Nauchno-populyarnaya biblioteka) Number of copies printed not given.

Ed.: Ye. M. Andreyev. Ed.: A.M. Gavrilov. Ed. and Compiler: L. D. Chernous'ko, Engineer, Captain.

PURPOSE: This book is intended for the general reader.

CONTENT: The papers in this collection discuss in popular style, and on the basis of data published in the Soviet and foreign press, problems of the use of atomic and hydrogen energy in the Navy. The collection includes reports on the development of nuclear propulsion and on the use of this weapon of mass destruction. A number of articles are devoted to the antinuclear defense of ships and of shore objects, and to the introduction of nuclear power plants in naval vessels. Also included in the collection are papers dealing with the future prospects for naval use of nuclear energy, and with the construction of the world's first atomic icebreaker, the "Lenin", which is expected to play an important part in the further conquest of the Arctic regions. The collection also contains papers published in the journal Sovetskoye Flot in 1955 - 1959, in revised and supplemented form.

Prolov, L., Engineer Commander. Penetrating Radiation

Altshuler, A., Engineer Lieutenant Colonel, and O. Bogdanov, Engineer Major. How Ships and Their Socks Effect

Prolov, L., Engineer Commander. Radiative Contamination

Abrosimov, L., Captain, and V. Vladimirov, Engineer Captain. Antinuclear Defense of a Ship

Mirgalev, G., Professor, Doctor of Technical Sciences, Engineer Captain. Defense of Ships Against Explosions

Abolikhin, P., Captain. Means of Antinuclear Protection of Ships of Foreign Navies

Bozhkov, P., Candidate of Technical Sciences, Engineer Commander. Antinuclear Defense of Light Ships

Gelis, V., Engineer Colonel. Antinuclear Defense of Objects Aboard

Prolov, L., Engineer Commander. Radiation Measurements

Altshuler, A., Engineer Colonel. Decontamination on a Ship

Polyakov, M., Engineer Captain. Protecting ships against contamination

Shcherbakov, A., Doctor, Candidate of Technical Sciences, Engineer Lieutenant Colonel. What is Dangerous in Testing of Nuclear Weapons

Bozhkov, P., Candidate of Technical Sciences, Engineer Commander. Microcollimators on Ships

Fikhtengolts, Ye., Lieutenant Colonel of Medical Service. Salinity Pro- cessing on a Ship

Buzman, A., Doctor, Candidate of Historical Sciences, Captain. Atomic Weapons and some Problems of Naval Tactics (According to Data from the Foreign Press)

Dvornik, A., Doctor, Candidate of Technical Sciences, Engineer Sub- Commander. American Submarines with Atomic Engines (According to Data from the Foreign Press)

Kilbasov, P., Candidate of Technical Sciences, Engineer Lieutenant Colonel. Atomic Depth Bomb (According to Data from the Foreign Press)

Raditskiy, M., Engineer Rear Admiral. Atomic Power Plants on Ships

Solov'yev, M., Doctor, Candidate of Technical Sciences, Engineer Captain. Use of Atomic Engines in Ships

Zvonkov, V., Corresponding Member of the Academy of Sciences of the USSR, Rear Admiral. The New Field of Science and Technology of the USSR. Atom-powered Ships

Warnerov, E., Guards Colonel. Atomic Seaplane of the Future (Ac- cording to Data from the Foreign Press)

Chernous'ko, L., Engineer Captain. The World's First Atomic Icebreak- er, "Lenin"

AVAILABLE: Library of Congress (DT67.039)

PETROV, Nikolay Panteleymonovich; SYRNEV, Vladillen Pavlovich; SEDOV,
A.I., kand.tekhn.nauk, inzh.-podpolkovnik, red.; KADER, Ya.M.,
red.izd-va; VOLKOVA, V.Ye., tekhn.red.

[Radioactive emission and its measurement] Radioaktivnye izlu-
chenia i ikh izmereniia. Izd.2., ispr. 1 dop. Moskva, Voen.
izd-vo M-va obor.SSSR, 1960. 190 p. (MIRA 13:7)
(Radioactivity--Measurement)

ACC NR: AR6036143

(N)

SOURCE CODE: UR/0396/66/000/010/VO10/VO10

AUTHOR: Nebesnov, V. N.; Sedov, A. M.

TITLE: Dynamic analysis of hydromechanical complexes of hydrofoils by means of analog computers

SOURCE: Ref. zh. Vodnyy transport, Abs. 10V50

REF SOURCE: Sb. Vyisl. tekhn. na morsk. transp. M., Transport, 1966, 76-87

TOPIC TAGS: hydrofoil, function analysis, mathematic analysis, analog computer

ABSTRACT: Theoretical methods of studying hydrofoils under transition operating conditions, such as the maneuvering properties of their main engine, power transmission, propeller, and hull system, and particularly of the composite hydromechanical complexes of hydrofoils, can be obtained only by means of analog computers. Such a system is investigated in the following consecutive order: plotting of the mathematical reference description of the system processes; reduction of equations to a general form; solving of transformations with analog computers; plotting of diagrams or approximate analytical relations. A mathematical description of the transition operating conditions of hydrofoil hydromechanical complexes with constant-pitch propellers is presented. The obtained equations are of a form adequate for easy use on analog computers.

SUB CODE: 13/ SUBM DATE: none/

UDC: 629.122.69

Card 1/1

SEDOV, A.P., redaktor.; SHATSKIY, Ye.Z.

[Achievements in the field of planning and erecting steel structures]
Dostizhenia v oblasti proektirovaniia i izgotovleniia stal'nykh
Konstruktsei. (Doklad podgotovlen E.Z. Shatskim) Moskva, Gos. izd-vo
lit-ry po stroitel'stvu i arkhitekture, 1954. 42 p. (MLRA 7:7)

1. Moscow. Tsentral'nyy institut informatsii po stroitel'stvu.
(Building. Iron and steel)

NEBOL'SIN, I.S., kandidat tekhnicheskikh nauk; SEDOV, A.P., inzhener,
nauchnyy redaktor; BEGAK, B.A., redaktor; PERSON, M.N., tekhnicheskii redaktor.

[Economic and technological aspects of the construction industry]
Proizvodstvennaia i tekhnicheskaiia baza stroitel'stva. Moskva, Gos.
izd-vo lit-ry po stroitel'stvu i arkhitekture, 1954. 334 p.
[Microfilm] (MLRA 7:11)
(Construction industry)

SEDOV, A.P., kand. arkhitektury

Using small precast elements and large panels in housing construction in France. *Biul. stroi. tekhn.* 12 no. 8:38-42 Ag '55.
(MIRA 12:1)

1. Tsentral'nyy institut informatsii po stroitel'stvu.
(France--Precast concrete construction)

SEDOV, Aleksey Pavlovich, kandidat arkhitektury; MARTYNOV, P.T., inzhener,
nauchnyy redaktor; UDOL, V.Ya, redaktor izdatel'stva; GUSEVA, S.S.
tekhnicheskiiy redaktor

[Vaults made of reeds] Svodchatye pokrytiia iz kamyshovykh fashin.
Moskva, Gos. izd-vo lit-ry po stroit. i arkhitekture, 1956. 95 p.
(Vaults) (MLRA 9:10)

IZHIKOV, Aleksandr Andreyevich, inzhener; SEDOV, Aleksandr Pavlovich,
inzhener; GURIN, A.V., redaktor; KUZ'MIN, D.G., tekhnicheskii redaktor

[Bricklaying and facing work] Kamennye i oblitsovochnye raboty.
Moskva, Vses. uchebno-pedagog. izd-vo Trudrezervizdat, 1956. 262 p.
(Bricklaying) (MLRA 9:12)

SEDOV, A.P.

Housing construction in Sweden and Denmark in the post-war period.
Opyt stroi.no.4:13-53 '56. (MLRA 10:2)

(Sweden--Apartment houses)
(Denmark--Apartment houses)

SEDOV, A.P.

Housing construction in France in the post-war period. Opyt stroi.
no.4:54-92 '56. (MLRA 10:2)

(France--Apartment houses)

SEDOV, A.P., kandidat arkhitektury.

Experimental apartment house in Goteborg with flexible floor plans.
Biul.stroi.tekh.13 no.3:35-39 Mr '56. (MIRA 9:7)

1.TsiINS.

(Sweden--Apartment houses)

SEDOV, A.P., kandidat arkhitektury.

Wall panels for apartment houses in Le Havre. Biul.stroi.tekh. 13
no.5:33-37 My '56. (MLRA 9:8)

1. TSentral'nyy institut informatsii po stroitel'stvu.
(Le Havre, France--Reinforced concrete construction)

SEDOV, A.P., kandidat arkhitektury.

New apartment houses in Vincennes. Biul.stori.tekh.13 no.10:38-43
0 '56. (MLRA 10:1)

1. TSentral'nyy institut informatsii po storitel'stvu.
(Paris--Apartment houses)

NOVIKOV, I.I., kand.iskusstvovedeniya arkh.; MANDRIKOV, A.P., kand.tekhn.nauk; SEDOV, A.P., kand.arkhitektury; KONYUSHKOV, A.M., kand.tekhn.nauk; SOKOLOV, Ye.B., kand.arkhitektury; SHATSKIY, Ye.Z., kand.tekhn.nauk; KRICHEVSKAYA, Ye.I., kand.tekhn.nauk; SHLEINA, L.A., kand.tekhn.nauk; KOVEL'MAN, I.A., kand.tekhn.nauk; AGASYAN, A.A., kand.tekhn.nauk; USENKO, V.M., kand.tekhn.nauk, nauchnyy red.; RARSKOV, I.M., iznh., nauchnyy red.; YUDINA, L.A., red.izd-va; PECHKOVSKAYA, T.V., tekhn.red.

[Building practices in the peoples' democracies. Based on reports by delegations of Soviet builders] Opyt stroitel'stva za rubezhom; v stranakh narodnoi demokratii. Po materialam ochetov delegatsii sovetskikh spetsialistov-stroitelei. Moskva, Gos. izd-vo lit-ry po stroit. i arkhit., 1957. 253 p. (MIRA 11:4)

1. Sotrudniki Tsentral'nogo instituta nauchnoy informatsii po stroitel'stvu i arkhitekture Akademii stroitel'stva i arkhitektury SSSR (for Novikov, Mandrikov, Sedov, Konyushkov, Sokolov, Shatskiy, Krichevskaya, Shleina, Kovel'man, Agasyan)
(Building)

32400, A-1
KAZINITSKIY, Mikhail Il'ich; POPOV, A.N.; SEDOV, A.P., nauchnyy redaktor;
GIMPEL'SON, A.Z., redaktor; PYATAKOVA, N.D., tekhnicheskiiy redaktor

[Building materials for few-story dwellings] Stroitel'nye materialy
dlia malootazhnykh zhilykh domov. Pod red. A.N.Popova. Moskva,
Gos.izd-vo lit-ry po stroit.materialam, 1957. 331 p. (MLRA 10:7)

1. Deystvitel'nyy chlen Akademii stroitel'stva i arkhitektury
SSSR (for Popov)
(Building materials)

SEP 1958
SEDOV, A.P., kand. arkhitektury.

Building large-block apartment houses in Tallin. Biul. stroi. tekhn.
15 no.1:13-16 Ja '58. (MIRA 11:2)

1. Tsentral'nyy nauchno-issledovatel'skiy institut stroitel'stva
Akademii stroitel'stva i arkhitektury SSSR.
(Tallin--Apartment houses) (Concrete blocks)

SEDov, A.P., kand. arkhitektury.

Houses built of plain and air-entrained silicate blocks in Tallin
and Leningrad. Opyt stroi. no.19:3-50 '58. (MIRA 12:1)
(Silicates) (Building blocks)

SEDov, Aleksey Pavlovich, kand. arkhitektury; DUBAKH, N.Ya., red.;
NIKOLAYEVA, L.N., tekhn. red.

[Automobile parking spaces and garages abroad] Avtostoiarki i garazhi dlia legkovykh avtomobilei za rubezhom. Moskva, Nauchno-tekhn. izd-vo M-va avtomobil'nogo transp. i shosseinykh dorog
RSFSR, 1961. 134 p. (MIRA 14:10)
(Garages) (Automobile parking)

SEDOV, A.P., kand.arhitektury; MOVINOV, I.I., arhitektov

Planning and building cement and precast reinforced concrete plants.
Opyt stroi. no.31:5-59 '61. (MIA 14:2)
(Cement plants) (Precast concrete)

OSIPOV, Mikhail Ivanovich; SEDOV, Aleksandr Pavlovich; LEBEDEV, V.I.,
nauchnyy red.; ROGAL'SKAYA, L.I., red.; MIKHAI'CHUK, Z.V.,
red.; BARANOVA, N.N., tekhn. red.

[Instruction in special masonry techniques] Prepodavanie spe-
tsial'noi tekhnologii kamennykh rabot. Moskva, Proftekhizdat,
1962. 153 p. (MIRA 15:11)
(Masonry--Study and teaching)

LEYKIN, B.P., red.; BALIKHIN, M.I., red.; FAKTOROVICH, Yu.A., red.;
 SEDOV, A.P., inzh., red.; EYDINOV, I.Sh., inzh. red.;
 ODINOKOV, S.D., kand. tekhn. nauk, red.; PETROVA, V.V.,
 red.izd-va; MOCHALINA, Z.S., tekhn. red.; CHERKASSKAYA, F.T.,
 tekhn. red.

[Construction specifications and regulations] Stroitel'nye normy
 i pravila. Moskva, Gosstroizdat. Pt.3. Sec.A. ch.8.[Basic
 principles and regulations for operational planning and remote
 control (SNiP III-A. 8-62)] Operativnoe planirovanie i dispetche-
 rizatsiia; osnovnye polozenia i pravila (SNiP III-A.8-62).
 1963. 7 p. Pt.3. Sec.V. ch.13.[Finishing coats for structures;
 regulations for production and acceptance of work (SNiP III-V.13-
 62)] Otdelochnye pokrytiia stroitel'nykh konstruktsii: pravila
 proizvodstva i priemki rabot (SNiP III-V.13-62). 1963. 24 p.
 (MIRA 16:6)

1. Russia (1923- U.S.R.)Gosudarstvennyy komitet po delam stroi-
 tel'stva. 2.Gosstroy SSSR (for Leykin, Sedov). 3. Mezhdovedomstven-
 naya komissiya po peresmotru stroitel'nykh norm i pravil(for Balakhin,
 Eydinov). 4. Nauchno-issledovatel'skiy institut ekonomiki stroitel'-
 stva i arkhitektury SSSR (for Faktorovich). 5. Nauchno-issledovatel'-
 skiy institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi
 stroitel'stvu Akademii stroitel'stva i arkhitektury SSSR (for
 Odinokov). (Finishes and finishing) (Construction industry)

88926

S/058/61/000/001/008/008
A001/A001

9,6000 (3702, 1040, 1099)

Translation from: Referativnyy zhurnal, Fizika, 1961, No. 1, p. 417, # 12h479

AUTHORS: Berbasov, V. A., Sedov, A. P.

TITLE: Analyzer of Spectrum in Range of 20 - 120 Mc

PERIODICAL: "Izv. vyssh. uchebn. zavedeniy. Radiotekhnika", 1960, Vol. 3, No. 1, pp. 119-121

TEXT: The authors describe a spectrum analyzer with a frequency range between 20 and 120 Mc, resolution power of 1 Mc, and sensitivity of $30 \mu v$ (for a monochromatic signal and signal-to-noise ratio equal to 1). The readjustable heterodyne is constructed according to the circuit of beat-frequency oscillator consisting of two klystrons (mean frequencies are 2,775 and 2,845 Mc) and a crystal mixer. Klystron frequency is modulated in antiphase with a frequency of 50 cps. The block-diagram of the device is presented.

B. Kats

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

1. 000, 1. 0.

"Integration of Light on Spectrographic Analysis," Dok. Ak. 41, No. 8, 1943. 11br.,
L.S. Spectral Analysis, State Optical Inst., -1943-.

SERDOV, A.V.; STAKHURSKIY, A.Ye., red.; KOVSHOVA, O.N., red.; LEBEDEV,
O.S., tekhn.red.

[Care of the bicycle] Ukhod za velosipedom. Moskva, M-vo kul'tury RSFSR, Izd-vo "Detskii mir", 1959. (Prilozhenie k zhurnal "Iunyi tekhnik," no.21 (63)). (MIRA 14:1)

1. Tsentral'naya stantsiya iunych tekhnikov, Moscow.
(Bicycles and tricycles)

SHESTOPALOV, Konstantin Sergeyevich, inzh.; SEDOV, A.V., red.; MANINA,
M.P., tekhn.red.

[Manual for drivers] Spravochnik shofera-liubitelia. Izd.4.,
dop. i perer. Moskva, Gos.izd-vo "Fizkul'tura i sport," 1959.
295 p. (MIRA 12:11)

(Automobiles--Handbooks, manuals, etc.)

PUZYREV, S.A.; SEDOV, A.V.

Sizing of paper with larch oleoresin. Bum.prom. [38] no.7:6-8
Jl '63. (MIRA 16:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut tsellyulozno-
bumazhnoy promyshlennosti.
(Sizing (Paper)) (Oleoresins)

SEDOV, A.V.

Experimental basis for the maximum permissible tetrachloroalkane concentrations in the water of reservoirs and rivers. San. okhr. vod. ot zagr. prom. stoich. vod. no.6:76-97 '64.

(MIRA 18:3)

1. Kafedra kommunal'noy gigiyeni I Moskovskogo ordena Lenina meditsinskogo instituta imeni I.M.Sechenova.

L 65131-65 EWT(m)/ENP(j) RM

ACCESSION NR: AP5021625

UR/0286/65/000/013/0108/0108

AUTHORS: Puzyrev, S. A.; Sedov, A. V.; Kondratov, V. V.; Kaydanskij, E. I.

TITLE: A method for producing paper. Class 55, No. 172623

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 13, 1965, 108

TOPIC TAGS: paper, filter paper, fuel purification, oil straining, cellulose, resin, mica

ABSTRACT: This Author Certificate presents a method for producing filter papers used for purifying liquid fuel and oil. The paper is made by pouring paper mass onto the sieve of a paper-making machine. To improve the filtering quality of the paper, a mixture of 30-40% mercerized sulfate cellulose, 20-30% of nonmercerized sulfate cellulose, 35-40% of henbane and aspen cellulose, 4-5% of white colophony glue, and 4-5% melaminoformaldehyde resin (by weight) are used as the raw material for the mass which, after being poured onto the sieve of the paper making machine, is reinforced with mica ribbon.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut tsellyulozno-bumazhnoy promyshlennosti (All-Union Scientific Research Institute of the Cellulose and Paper Industry)

Card 1/2

L 65131-65

ACCESSION NR: AP5021625

SUBMITTED: 13Jul64

NO REF SOV: 000

ENCL: 00

OTHER: 000

SUB CODE: IE

Det
Card 2/2

PYATAKOV, A.; PLETENEV, P.; Chos, S.; SEDOV, B.; SAAKOV, M.; ORLOVSKIY, Yu.; KARASINA, N.; MAMIOFA, I., inzh.

Discussing the draft of the "Basic Principles of the Labor Law of the U.S.S.R. and the Union Republics". Sots.trud 4 no.11:12-32 (MIRA 13:4)
N '59.

1. Direktor Krasnopresnenskogo sakharorafinadnogo zavoda (for Chos). 2. Predsedatel' zavkoma profsoyuza Krasnopresnenskogo sakharorafinadnogo zavoda (for Sedov). 3. Zamestitel' zaveduyushchego otdelom truda i zarabotnoy platy TSentral'nogo komiteta profsoyuza rabochikh neftyanoy i khimicheskoy promyshlennosti (for Saakov). 4. Institut prava AN SSSR (for Orlovskiy). 5. Institut okhrany truda Vsesoyuznogo tsentral'nogo soveta profsoyuzov (for Karasina). 6. Leningradskiy oblastnoy sovet Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov (for Mamiofa).

(Labor laws and legislation)

SEDOV, B.I.

Determining moisture content by means of lithium chloride.
Trudy NIKFI no.45:50-56 '62. (MIRA 15:9)
(Moisture--Measurement) (Lithium chloride)

L 10728-63 EWA(k)/EWT(1)/FBD/T-2/3W2/EEC(b)-2/ES(t)-2/BDS AFFTC/ASD/
ESD-3/RADC/APGC/AFWL Pl-4/Po-4 JHB/WG/IJP(C)/K/EH

ACCESSION NR: AP3003116

S/0056/63/044/006/1884/1888

AUTHOR: Anan'yev, Yu. A.; Yegorova, V. F.; Mak, A. A.; Prilezhayev, D.S.;
Sedov, B. M.

TITLE: On the operation of a four-level laser²⁵

SOURCE: Zhurnal eksper. i teor. fiziki, v. 44, no. 6, 1963, 1884-1888

TOPIC TAGS: four-level laser, trivalent uranium laser, divalent samarium
laser, calcium fluoride laser

ABSTRACT: A theoretical and experimental study of the operation of a four-level
laser has been conducted. Equations were derived for steady-state operation,
cavity parameters, properties of working substances and host substances,
pumping power, threshold, energy-level populations, various transition proba-
bilities, and output power. To verify the theoretical calculations, experiments
were conducted to determine the dependence of pumping power and output power

Card 1/2

L 10728-63

ACCESSION NR: AP3003116

of samarium-doped and uranium-doped calcium fluoride lasers on crystal temperature and reflection factor of the mirrors and to determine the relationship between pumping power and output power. Cylindrical crystals with dielectric-coated end faces were used with temperatures ranging from 8 to 300K. Experimental results were in good agreement with the theoretical. Conditions for the transition from four-level to three-level operation were found for the uranium-doped calcium fluoride laser. Orig. art. has: 10 formulas and 4 figures.

ASSOCIATION: Gosudarstvennyy opticheskiy institut im. S. I. Vavilova
(State Institute of Optics)

SUBMITTED: 21Feb63

DATE ACQ: 23Jul63

ENCL: 00

SUB CODE: 00

NO REF SOV: 001

OTHER: 002

Yh/2
Card 2/2

ACC NR: AF/006122

SOURCE CODE: UR/0056/67/052/001/0012/0020

AUTHOR: Anan'yev, Yu. A.; Mak, A. A.; Sedov, B. M.

ORG: none

TITLE: Angular divergence of emission from a solid state laser

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 52, no. 1, 1967, 12-20

TOPIC TAGS: ~~solid state laser~~, ~~paramagnetic laser~~, ~~laser beam~~, ~~beam divergence~~, ~~neodymium glass~~, ~~calcium fluoride~~, ~~neodymium laser~~, ~~laser cavity~~

ABSTRACT: To determine the influence of pump and cavity parameters on the divergence of a solid state laser, and to ascertain the degree to which laser mode selection is affected by the connection between the angle and energy characteristics of the laser, the authors measured the beam divergence of neodymium-glass and $\text{CaF}_2:\text{Sm}^{++}$ lasers whose pump and cavity parameters were varied. The beam divergence was determined by a photographic procedure. The pump was a straight xenon flash lamp in an elliptic reflector. The cavity length ranged from 0.5 to 300 cm. The pump energy did not exceed 50 - 70 J for the $\text{CaF}_2:\text{Sm}^{++}$ laser and 130 J for the neodymium-glass laser. The beam divergence was found to be practically independent of the excess energy over threshold and of the reflection coefficient of the cavity mirror. The generated power, the beam divergence, and the threshold of pump intensity all decreased with increasing cavity length, but by varying degrees, the divergence being inversely proportional to the square root of the cavity length in an appreciable range of lengths. It is concluded that the experimentally observed beam divergence is governed by the excitation of a

Card 1/2

UDC: none

ACC NR: AP7006122

large number of competing transverse modes in the laser, with diffraction losses playing the major role in this competition. Using quantitative data from an earlier study (ZhTF v. 37, 139, 1967), it is shown that by judicious selection of the modes it is possible to reduce the beam divergence to a value close to the diffraction limit, without greatly reducing the generation power. Orig. art. has: 5 figures, 3 formulas, and 2 tables. [02]

SUB CODE: 20/ SUBM DATE: 25May66/ ORIG REF: 013/ OTH REF: 006 /
ATD PRESS: 5117

Card 2/2

ACCESSION NR: AP4035484

S/0051/64/016/005/0911/0914

AUTHOR: Anan'yev, Yu. A.; Galaktionova, N. M.; Mak, A. A.;
Sedov, B. M.

TITLE: The emission spectrum of a samarium 2+ doped calcium
fluoride laser

SOURCE: Optika i spektroskopiya, v. 16, no. 5, 1964, 911-914

TOPIC TAGS: emission spectrum, calcium fluoride laser, samarium 2+
doped laser, laser oscillation spectrum, laser crystal

ABSTRACT: The experimental investigation of the emission spectrum
of a samarium 2+ doped fluoride laser (emitting at 0.708 μ) was
performed to establish the relationship between the temperature of
crystal and the broadening of the oscillation spectrum. This confirms
that while at small pumping energies the number of modes is indepen-
dent of the energy, it sharply increases at larger energies, reaching

Card 1/2

ACCESSION NR: AP4035484

16 when the crystal is heated to 60K. Theoretical and experimental results indicate that the heating, due to Stokes losses, of a crystal 33 mm long at 25K is less than 3—5 deg. when the pumping energy is 22 joules and 15—20 deg at 92 joules. During the oscillation pulse the wavelength of each mode increases by $0.09\text{\AA}$, while the distance between adjacent modes remains constant at $0.088\text{\AA}$. For a 30-deg heating of the crystal, the total spectral shift of the laser was $\sim 0.6\text{\AA}$, and thus the shift versus the heating rate was $\sim 0.02\text{\AA}/\text{degree}$. The width of spectral modes varied during oscillation from $0.035\text{\AA}$ (start) to $0.017\text{\AA}$ (end). Results indicate that the various modes are independent of each other only at the start. Splitting of spectral modes into 2 components was observed at the start of oscillation; it amounted to $\sim 0.035\text{\AA}$. The reason for this remains unknown. Orig. art. has: 1 formula and 5 figures.

ASSOCIATION: none

SUBMITTED: 16Aug63

SUB CODE: PH

DATE ACQ: 22May64

NO REF SOV: 001

ENCL: 00

OTHER: 001

Card 2/2

L 25312-65 EWA(k)/EWT(1)/EEC(k)-2/T/EEC(b)-2/EWP(k)/EWA(m)-2 Po-4/P1-7-1-1
 P1-4 IJP(c) WG/JHB
 S/0056/65/048/001/0007/0012

ACCESSION NR: AP5004366

AUTHOR: Anan'yev, Yu. A.; Mak, A. A.; Sedov, B. M.

TITLE: Amplification of light²¹ by four-level quantum systems²¹

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 1, 1965, 7-12

TOPIC TAGS: four-level system, light amplification, $\text{CaF}_2:\text{Sm}^{2+}$ laser, paramagnetic laser, laser amplifier

ABSTRACT: A study was made of the amplification of light in a four-level laser system in which the signal wavelength corresponded to the maximum coefficient of negative absorption of the medium. The theoretical studies, based on a probability method, were made for the steady and transient states of amplification. The experimental investigation was limited to the measurement of the gain in a steady state. For this purpose, the authors used $\text{CaF}_2:\text{Sm}^{2+}$ crystals at 20K. Two cylindrical rods 30 mm long and 8 mm in diameter with coated plane ends and unpolished sides were placed in a cryostat. One of the rods, pumped by a pulse 25—30 μsec in duration, acted as a signal source; the other, pumped by a longer (150 μsec) pulse, was the amplification. Gain measurements were carried out at various pumping intensities.

Card 1/2

L 25312-65

ACCESSION NR: AP5004366

The results show that gain decreased when signal intensity increased. This relationship was most noticeable at high gain. The theoretical and experimental results were in good agreement, except when the coefficient of amplification was equal to or exceeded 7. In this case, the disagreement was apparently due to a decrease in the lifetime of the excited state (in the presence of considerable population inversion) which leads in turn to a decrease in the gain. Orig. art. has: 6 formulas and 3 figures. [YK]

ASSOCIATION: Gosudarstvennyy opticheskiy institut im. S. I. Vavilova (State Optical Institute)

SUBMITTED: 18Apr64

ENCL: 00

SUB CODE: EC, OP

NO REF SOV: 003

OTHER: 002

ATD PRESS: 3184

Card 2/2

ANATOLY, Yu.A.; MAK, A.A.; SHOLOV, B.M.

Light amplification by four-level quantum systems. Zhur. eksp.
teor. fiz. 48 no.117-12 Ja '65. (MIRA 1344)

L. Gornbratvanny opticheskiy Institut imeni Vavilova, Leningrad.

ACC NR: AP6036692

SOURCE CODE: UR/0237/66/000/011/0025/0029

AUTHOR: Kozlov, N. A.; Mak, A. A. (Candidate of sciences); Sedov, B. M.

ORG: none

TITLE: Solid-state laser pumped by solar radiation

SOURCE: Optiko-mekhanicheskaya promyshlennost', no. 11, 1966, 25-29

TOPIC TAGS: solid state laser, paramagnetic laser, samarium doped laser, dysprosium doped laser, neodymium glass laser, solar radiation, laser pumping, solar radiation pumping

ABSTRACT: An experimental study was made of cw $\text{CaF}_2:\text{Dy}^{2+}$, $\text{CaF}_2:\text{Sm}^{2+}$, and $\text{CaWO}_4:\text{Nd}^{3+}$ lasers pumped by solar radiation. The $\text{CaF}_2:\text{Dy}^{2+}$ and Sm^{2+} crystals were 8 mm long and 3 mm in diameter and the $\text{CaWO}_4:\text{Nd}^{3+}$ crystals, 11 and 3 mm, respectively, their ends being coated with a highly reflective dielectric. The optical system for the concentration of the solar radiation is shown in Fig. 1. The parabolic mirror is made of aluminum-reinforced cast glass. The mirror aperture D (regulated by variable diaphragms 12) was 55 to 150 cm and its focal length 62.5 cm. The mirror was independently suspended and could rotate in two planes (0 to 360° horizontally, and -10 to + 90° vertically). A conical cell 3, cooled by an aqueous solution of sodium nitrite (or bichromate), was used to cut off the u-v radiation; its transmission (with filters 9) in the 0.5—1.0 μ region was 85—90%. A plane octahedral (140 cm between

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UDC: 621.375.9

ACC NR: AP6036692

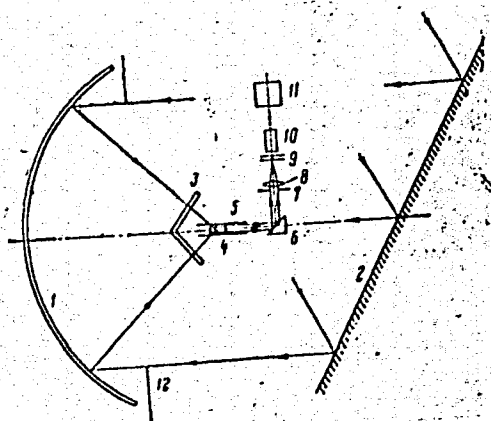


Fig. 1. Laser with solar radiation pumping

- 1 - Parabolic mirror; 2 - plane mirror;
- 3 - conical cell; 4 - active medium;
- 5 - heat exchanger; 6 - prism;
- 7 - diaphragm; 8 - lens; 9 - light filters;
- 10 - thermal sensor; 11 - photomultiplier;
- 12 - variable diaphragm.

sides) aluminum mirror-2 was used to direct solar rays onto the parabolic mirror in those cases when low-temperature (30—77K) crystals were used with complicated cooling systems, so that the active material remained undisturbed in the region of maximum illumination of the parabolic mirror as it followed the sun. Other components of the radiation-concentration system are described in detail. In the case of the $\text{CaF}_2:\text{Dy}^{2+}$ laser, the active material was cooled by liquid O_2 precooled by N to 77K, and cw generation was achieved at $D = 50$ cm, although it was interrupted several

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ACC NR: AP6036692

seconds later due to the insufficient cooling of the active medium. In the case of the $\text{CaF}_2:\text{Sm}^{2+}$ laser, the active material was placed in a Pyrex-glass cell and cooled by helium gas (5—6K, flowing at $140 \text{ g/cm}^2 \cdot \text{sec}$). The undesirable u-v was filtered by an aqueous solution of sodium nitrite. Although the experiments were carried out during bright, cloudless days, no generation was achieved in $\text{CaF}_2:\text{Sm}^{2+}$ even at $D = 150 \text{ cm}$, perhaps because of the overheating of the crystal or insufficient pumping. In the case of the $\text{CaWO}_4:\text{Nd}^{3+}$ laser, the active material was placed in a water-cooled glass tube (flowing at 1—2 liters/min). The u-v radiation was eliminated by an aqueous solution of sodium nitrite flowing at 10 liter/min. Cw generation was observed during cloudless days from 11:00 A. M. to 2:00 P. M. The smallest D for which cw generation at 1.06μ occurred was 50—100 cm, depending on the quality of the crystal. The maximum generation power, 130 mw, was obtained at $D = 150 \text{ cm}$. Stable operation was observed at $D = 110 \text{ cm}$. Cw generation was interrupted when the mirror ($D = 150 \text{ cm}$) was exposed to radiation for 30—40 sec. Orig. art. has: 5 figures.

SUB CODE: 20/ SUBM DATE: 31Mar66/ ORIG REF: 007/ OTH REF: 007/
ATD PRESS: 5108

Card 3/3

L 3202-66 EWT(1) IJP(c)

ACCESSION NR: AP5008732

S/0056/65/048/003/0782/0790

AUTHOR: Anan'yev, Yu. A.; Sedov, B. M. 44,55

TITLE: Spectral and time characteristics of stimulated emission from $\text{CaF}_2:\text{Sm}^{2+}$ 25
22
3

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 48, no. 3, 1965, 782-790

TOPIC TAGS: stimulated phosphorescence, calcium fluoride, samarium, stimulated emission, paramagnetic laser 21,44,55

ABSTRACT: This experiment was conducted to explain some of the phenomena which have been observed in the spectral and time characteristics of stimulated emission. $\text{CaF}_2:\text{Sm}^{2+}$ was selected as the active medium in studying many of the unexplained problems connected with the "spike" nature of stimulated emission, since this substance is the only solid medium which has shown no "spikes" in its emission. The results of radiation distribution studies with respect to axial oscillation modes are given in graphic form. It was found that the greatest portion of the stimulated emission is concentrated in a relatively narrow spectral zone close to the maximum for the luminescence line. The results of the studies indicate that many of the stimulated emission properties for $\text{CaF}_2:\text{Sm}^{2+}$ are explained quite well by generally

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ACCESSION NR: AP5008732

accepted hypotheses. For instance the stimulated emission from a sample with flat ends is divided into a number of bands which correspond to groups of oscillations with identical axial indices. Radiation distribution in these bands is described satisfactorily by the relationships obtained by Tang et al. (C. L. Tang, H. Statz, G. De Mars, *J. of Appl. Phys.*, 34, 2289, 1963). Small deviations from the ideal shape of the resonator cause considerable changes in the oscillation modes. It was found that the average value of the spectral intervals between separate modes of oscillation corresponds satisfactorily with the error in manufacture of the resonator. The absence of oscillations in integrated emission from $\text{CaF}_2:\text{Sm}^{2+}$ is explained by pile-up of a large number of spikes over a period of time, these spikes corresponding to emission of various modes of oscillation. "The authors extend their thanks to A. A. Mak for suggesting the problem, valuable advice and reviewing the results." Orig. art. has: 6 figures, 2 formulas, 1 table. [14]

ASSOCIATION: , none

SUBMITTED: 19May64

ENCL: 00

SUB CODE: EC, OP

NO REF SOV: 009

OTHER: 009

ATD PRESS: 4013

PC
Card 2/2

BONDARENKO, V.G., inzh.; SEROV, B.N., inzh.

Centralized communications by loud-speaker in building mine surfaces.
Shakht. stroi. no.9:18-19 '58. (MIRA 11:10)
(Mine communications) (Automatic control)

39300
99865

AUTHORS:

TITLE:

PERIODICAL:

29505
S/049/60/000/011/006/012
D274/D305

Rykunov, L. N., Khorosheva, V. V., and Sedov, B. V.

A two-dimensional model of a seismic wave guide without sharply defined limits

Akademiya nauk SSSR. Izvestiya. Seriya geofizicheskaya, no. 11, 1960, 1601-3

TEXT: The great interest shown by many authors in propagation of seismic waves in the presence of a low-speed layer and in media with continuously varying velocity prompted this attempt to investigate the possibility of models of such media. Change of elastic properties of some materials with temperature was employed for this purpose. The material chosen was a paraffin-polyethylene alloy, 97% : 3% (a plate 5 mm thick). The radiated elastic pulse had the form $\sin \frac{2\pi}{T} t$, where $0 < t < T$ and $T = 20 \cdot 10^{-6}$ sec. Velocities of elastic waves were determined by hodograph plotting. The change of velocity and absorption of

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A two-dimensional...

elastic waves were measured. The positions of the pulse emitter and the receiver were constant during the experiment, so that amplitude variations of P and S waves caused by change of absorption at different temperatures could be reliably estimated. The variations of temperature were measured by means of low-inertia resistance thermometers. The records showed that with a temperature increase from 10° to 30° C the velocities of P and S waves decreased more than twice. Poisson's coefficient was practically constant--0.31. The change in behavior of the plate became very marked at temperatures above 20° C. Between 10° and 20° C, the amplitudes of P and S waves remained practically constant and, consequently, their absorption also. In the same temperature interval the velocities of P and S waves decreased by 18° and 20°/° C. The model itself is shown, and the results of the investigation are illustrated graphically. The authors note that paraffin-polyethylene has one considerable disadvantage--a high wave absorption $\alpha_p = 0.025 \text{ cm}^{-1}$ at 45 kc/s, but it can be greatly reduced by using low-frequency transmitters. The authors conclude that the material proved to be satisfactory at temperatures below 20° C. X

A two-dimensional...

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D247/D305

There is an acknowledgment to S. D. Selyuminov for his aid in the experiments. There are 6 figures and 4 references; 2 Soviet-bloc and 2 non-Soviet-bloc. The references to the English-language publications read as follows: N. Ricker, The form and nature of seismic waves and the structure of seismograms, Geophys., 5, no. 4, 1940; H. E. Szendrei, An experimental investigation of the propagation of a sonic pulse along the surface of a semi-infinite medium, Geophys. pura a appl., 43, 1959.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V.
Lomonosova (Moscow State University im. M. V. Lomonosov)

SUBMITTED: May 19, 1960

Card 3/3

POPIY, M.P., inzh.; KURNIKOV, D.A., tekhnik; KLYKOV, I.S., tekhnik;
ANFINOGENOV, I.P., tekhnik; SEDOV, B.P., tekhnik;
KHAN, R.A., tekhnik

Profiling vertical mine shafts from a permanent base.
Shakht. stroi. 7 no.8:25-28 Ag '63. (MIRA 16:11)

1. Leninogorskoye shakhtostroyupravleniye.

~~SEDOV~~, B.Ya., otvetstvennyy redaktor; NADWINSKAYA, A.A., tekhnicheskii redaktor; PROZOROVSKAYA, V.L., tekhnicheskii redaktor

[Mine construction research] Issledovaniia po shakhtonomu stroitel'stvu. Moskva, Ugletekhizdat, 1954. 237 p. (MLRA 8:3)

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(Mining engineering)

SEDov, Boris Yakovlevich; NIKOLAYENKO, Aleksey Timofeyevich; YUDITSKIY,
Grigoriy Izrailevich; KOSTAN'YAN, A.Ya., red. izd-va;
LOMILINA, L.N., tekhn. red.

[Drilling rigs for sinking shafts and boreholes] Burovye usta-
novki dlia prokhodki stvolov i skvazhin; spravochnik. Moskva,
Gosgortekhhizdat, 1962. 363 p. (MIRA 16:2)
(Shaft sinking) (Boring)

SEDOV, B.Ya.

The All-Union Scientific Research Institute for the Organization and Mechanization of Mine Construction at the Exhibition of Achievements of the National Economy of the U.S.S.R. Shakht. stroi. 8 no.8:49-32
Ag '64. (MIRA 17:9)

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SEDOV, B.Ya., inzh.; BUBLIKOV, Ye.V., inzh.

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(MIRA 19:1)

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[Manual for engineers in textile industry] Spravochnik energetika tekstil'noy promyshlennosti. Moskva, Gos.nauchno-tekhn.isd-vo Ministerstva promysh.tovarov shirokogo potrebleniia SSSR. Vol. 1
[Electric engineering] 1955. 630 p. (MLRA 8:12)
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NACHINKIN, O.I.; SHUH'YEVA, G.G.; KONSTANTINOVA, G.V.; SEDOV, P.A.;
TROITSKAYA, N.N., master-laborant; DOBROMYSLOVA, M.F., master-
laborant

Use of surface-active agents in the production of "Vinol" fibers.
Khim. volok. no.6:26-28 '65. (MLR. 18:12)

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